Physical Geography 12th edition Petersen Test Bank

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Name:_____ Class:_____ Date:_____

Chapter 01 - Physical Geography: Physical, Spatial, and Environmental Science

1. An ecosystem is an example of a(n) _____, because energy and matter are freely exchanged at its boundaries.
   a. open system
   b. closed system
   c. output
   d. conceptual model
   e. input

ANSWER: a

2. A(n) _____ seeks to explain an observation and must be tested before it can be accepted as true.
   a. hypothesis
   b. test
   c. problem
   d. strategy
   e. method

ANSWER: a

3. Areas identified by distinctive characteristics that distinguish them from surrounding areas are known as:
   a. ecosystems.
   b. regions.
   c. systems.
   d. locations.
   e. patterns.

ANSWER: b

4. A sequence of changes that reinforces the direction of initial change is known as _____ feedback.
   a. positive
   b. negative
   c. neutral
   d. spatial
   e. static

ANSWER: a

5. The _____ layer in the upper atmosphere protects us by blocking much of the sun's harmful ultraviolet (UV) radiation, which causes skin cancer and cell mutations.
   a. carbon
   b. nitrogen
   c. ozone
   d. chlorofluorocarbon
   e. hydrogen

ANSWER: c

6. Natural processes, typically of unusual intensity, that put environments and human life or property at risk of damage or destruction are called:
   a. environmental degradation.

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b. pollution.
c. natural hazards.
d. natural resources.
e. negative feedback.

ANSWER: c

7. Why are human-environment interactions considered two-way relationships?
a. Both humans and the environment mutually benefit from the relationship.
b. The environment influences human activities and human activities affect the environment.
c. Humans affect the environment in two major ways, through environmental degradation and pollution.
d. The environment affects human activities only when it responds to the negative effects of environmental degradation and pollution.
e. Human-environment interactions are better described as one-way relationships. Sometimes the environment affects human activity and other times humans affect the environment, but this never occurs simultaneously.

ANSWER: b

8. Which of the following is an example of a holistic approach?
a. A geographer studying habitat loss in a region has considered all the factors when forming their hypothesis, including human and environmental ones.
b. A mathematician focuses specifically on the statistics and trends of a specific issue.
c. A meteorologist studying the current changes in weather occurring in a region only considers atmospheric changes.
d. A physicist looks at the physical aspects of a phenomena but does not consider the human or societal components.
e. Geologists searching for natural resources identify a particular area with an abundance of valuable minerals. They decide to start mining in this area, but do not consider how their mining activity affects the surrounding communities.

ANSWER: a

9. The art of making maps is called:
a. cartography.
b. mental mapping.
c. modeling.
d. remote sensing.
e. ecology.

ANSWER: a

10. A coordinate system can be used to identify a(n):
a. absolute location.
b. relative location.
c. spatial interaction.
d. characteristic of place.
e. ecosystem.

ANSWER: a

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11. A world globe, or a three-dimensional replica of planet Earth, is an example of a(n) _____ model.
    a. physical
    b. conceptual
    c. mental
    d. dynamic
    e. political

ANSWER: a

12. Which of the following is ***not*** one of Earth's four major subsystems?
    a. atmosphere
    b. hydrosphere
    c. lithosphere
    d. biosphere
    e. ionosphere

ANSWER: e

13. Which topic would a human geographer be most interested in researching?
    a. the formation of Earth's landforms
    b. the spread of ideas and culture across a population
    c. the interaction between humans and the environment
    d. using models to predict changes in the Earth's atmosphere
    e. wildlife migration patterns

ANSWER: b

14. The study of landforms and their development is called:
    a. geomorphology.
    b. biology.
    c. mathematics.
    d. ecology.
    e. meteorology.

ANSWER: a

15. An undesirable or unhealthy contaminant in an environment is called:
    a. a natural hazard.
    b. pollution.
    c. a location.
    d. negative feedback.
    e. input.

ANSWER: b

16. Which of the following would be an example of pollution?
    a. Excess rainfall leads to severe flooding and property damage along a river.
    b. A hurricane causes major devastation along a coastal town.
    c. A river is artificially straightened by humans.

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d. Human use of chlorofluorocarbons leads to a buildup of CFCs in the atmosphere.
e. Water in a reservoir evaporates into the atmosphere.

ANSWER: d

17. Which is the best example of a spatial interaction?
a. Pikes Peak, a well-known mountain in the Rocky Mountains, is located about 22 miles west of the city of Colorado Springs.
b. A heavy thunderstorm hits Minnesota, which contains the headwaters for the Mississippi River. The excess rainfall in Minnesota causes severe flooding along the Mississippi River in Missouri.
c. A large fire completely burns down all the trees and vegetation in a forest. The forest slowly recovers from the fire, and the reestablishment of plant and animal communities occurs over time.
d. The North American Great Plains contain a distinct mixture of vegetation, climate, and wildlife. The area also has a unique human culture and is categorized as a region. The distinctiveness of this region can be seen when comparing it to other grassland regions around the world.
e. New York City is located at 40.7128° N, 74.0060° W, while Washington D.C. is located at 38.9072° N, 77.0369° W.

ANSWER: b

18. Which of the following is an example of sustainability?
a. removing pollution from a water body such as a lake
b. harvesting just enough fish from a lake so that the fish population is fully replenished in a year
c. restoring a previously disturbed ecosystem
d. growing more and more crops on a farm each year until the soil can no longer support plant growth
e. rebuilding a community that was destroyed by a natural disaster

ANSWER: b

19. What information can be derived specifically from the use of GPS?
a. change over time
b. absolute location
c. characteristics of places
d. local weather
e. human-environment interaction

ANSWER: b

20. Why is physical geography a key component of our daily lives?
a. It helps us understand our natural habitat.
b. It helps us determine if we are paying too much for car insurance.
c. It explains how ideas such as culture and religion spread.
d. It can predict future outcomes of the stock market.
e. Physical geography does not play a part in our daily lives.

ANSWER: a

21. Which of the below examples would ***not*** constitute a "region"?
a. the Rocky Mountains
b. Texas

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c. 40°43'43.83"N, 105° 8'23.89"W
d. Eastern Europe
e. the Sahara Desert

ANSWER: c

22. What do all three of the major perspectives of physical geography share?
a. a focus on environmental sustainability
b. use of the scientific method for guiding research
c. emphasis on the Earth's internal structure
d. studying the impact that humans have on the environment
e. concentrating on human phenomena such as urbanization and population

ANSWER: b

23. What is the first step of the scientific method?
a. Note an observation that requires an explanation.
b. State the observation in the form of a testable hypothesis.
c. Apply a strategy to test the validity of the hypothesis.
d. Reject your hypothesis based on your test results.
e. Devise a strategy for testing the hypothesis.

ANSWER: a

24. Which of the following is an example of a hypothesis?
a. Why are lakes at higher elevations colder than lakes at lower elevations?
b. Lakes at higher elevations are colder because the overall climate is colder.
c. The temperature of Lake A is 38° F.
d. Some lakes are cold, and others are not. There is no pattern or relationship to other factors that we can derive.
e. The temperature at several lakes will be gathered with a thermometer.

ANSWER: b

25. Looking at a population density map of the United States would be observing what spatial characteristic?
a. spatial distribution
b. spatial scale
c. absolute location
d. change over time
e. spatial interaction

ANSWER: a

26. What is sustainability?
a. using less or an equal amount of a resource in a year than its annual renewal, growth, or replacement
b. using more of a resource in a year than its annual renewal, growth, or replacement
c. environmental damage caused by human activities
d. any natural process that puts environments and human life or property at risk of damage or destruction
e. a process for developing valid explanations for observed phenomena

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ANSWER: a

27. What type of educational background would best benefit someone who will be using maps, location, and spatial data to solve world problems?
    a. biology
    b. geology
    c. geography
    d. mathematics
    e. economics

ANSWER: c

28. How do you describe a "region"?
    a. an area identified by distinctive characteristics that distinguish them from surrounding areas
    b. any organized entity that consists of interrelated and interacting components
    c. a location with a precise GPS coordinate
    d. any landform or process occurring on Earth's surface
    e. a source of geographic data which displays the results of geographic analysis

ANSWER: a

29. What is a remotely controlled aerial vehicle capable of capturing geographic data?
    a. drone
    b. helicopter
    c. GPS
    d. airplane
    e. tablet

ANSWER: a

30. What is one common use of satellite imagery?
    a. recording atmospheric temperatures
    b. observing changes on the Earth's surface
    c. tracking seismic activity in a particular location
    d. measuring precise latitude and longitude coordinates
    e. calculating changes in water quality

ANSWER: b

31. What is an ecosystem?
    a. a gaseous blanket of air that envelops, shields, and insulates Earth
    b. a collection of landforms, minerals, rocks, and soils
    c. all the waters in an area, including oceans, lakes, rivers, and glaciers
    d. a community of organisms and the relationships of those organisms to one another and to their environment
    e. an area identified by distinct characteristics that distinguish them from surrounding environments

ANSWER: d

32. What do physical geography and human geography have in common?

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a. Both are holistic in their approach and emphasize the spatial aspects of phenomena.
b. Both focus on the nature of human generated phenomena.
c. Both disciplines are interested in averages and extremes of long-term weather data.
d. Both study the geographic ranges and distribution patterns of plant and animal species.
e. There are no easily identifiable commonalities between physical geography and human geography.

ANSWER: a

33. What information would you need to accept a hypothesis that you have proposed if you are following the scientific method?
a. valid data that supports your hypothesis
b. an observation that is easily explained by your hypothesis
c. an alternate hypothesis that directly contradicts your first hypothesis
d. a test designed to gather data that will support your hypothesis
e. valid data that does not support your hypothesis

ANSWER: a

34. Which is an example of a ***natural*** hazard?
a. a lake becomes severely polluted from nearby mining activity
b. a riverfront community is destroyed from severe flooding due to heavy rainfall
c. a human-engineered dam fails and causes massive flooding downstream
d. unsustainable farming practices cause widespread soil loss in an area
e. acid rain caused from pollution damages nearby forests and kills fish in local freshwater lakes

ANSWER: b

35. What makes a natural resource "nonrenewable"?
a. It regenerates much slower than the rate of consumption.
b. It does not have any value or use by humans.
c. It cannot be abused, wasted, or exhausted.
d. It can only been depleted at a local or regional scale.
e. It regenerates quickly enough to be consumed at a rapid rate.

ANSWER: a

36. The human body is like Earth in that it is a system with inputs and outputs of energy and matter.
a. True
b. False

ANSWER: True

37. Geographers tend to observe phenomena at a global scale.
a. True
b. False

ANSWER: False

38. Geography is considered a *spatial discipline* because geographers gather most of their data from space, such as imagery from satellites.

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a. True
b. False

ANSWER: False

39. Satellites have only been acquiring imagery of Earth for about 10 years, so the information that they can provide about Earth's surface is very limited.
a. True
b. False

ANSWER: False

40. A nighttime satellite image showing the lights from urban areas is a great way to observe spatial distribution and pattern.
a. True
b. False

ANSWER: True

41. The absolute location of a point can be used to identify specific characteristics of the surrounding region.
a. True
b. False

ANSWER: False

42. The Earth system is static, meaning that is does not change and remains constant.
a. True
b. False

ANSWER: False

43. Human geographers do not use a holistic approach in solving problems, because they are specifically focused on the human aspects of spatial problems.
a. True
b. False

ANSWER: False

44. The last step in the scientific method is to accept or reject your hypothesis.
a. True
b. False

ANSWER: True

45. The environmental science perspective of physical geography focuses on the spatial components of a phenomena.
a. True
b. False

ANSWER: False

46. The concept of an ecosystem only applies to the living things in an area.
a. True
b. False

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ANSWER: False

47. Because physical geography focuses on the natural landforms and processes of Earth, it does not consider human and environment interactions.
    a. True
    b. False

ANSWER: False

48. A mental map would be an example of a pictorial model because it contains graphics that are easy to share with others.
    a. True
    b. False

ANSWER: False

49. A mental map could be a concept that someone uses to remember their daily commute to work.
    a. True
    b. False

ANSWER: True

50. Whenever the inputs of a system equal its outputs, that system is at a threshold.
    a. True
    b. False

ANSWER: False

51. Our environment consists of our surroundings, including all the physical, social, and cultural aspects of the world around us.
    a. True
    b. False

ANSWER: True

52. Environmental overshoot occurs when resources are consumed at a level that Earth can sustain indefinitely.
    a. True
    b. False

ANSWER: False

53. Equilibrium within a system tends to fall within a range of tolerance, it is almost never static.
    a. True
    b. False

ANSWER: True

54. Positive feedback tends to maintain equilibrium in a system.
    a. True
    b. False

ANSWER: False

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55. Physical geographers tend to focus on the Earth's features as they are now. They do not consider how the Earth has changed over time.

a. True

b. False

ANSWER: False

56. Geography is a discipline that has been practiced by humans for thousands of years. Recall some of the earlier methods that humans used for mapping and navigation before modern technology. How has the recent advancement in geographic technology changed the field? Mention at least 3 specific technologies. Answer the question in 5-10 sentences.

ANSWER: May vary. Possible answers include gathering more accurate data, and the ability to acquire information faster and at a global scale. Answers may also include how analyzing and producing geographic information is much easier with computers. Students should also identify specific technologies in their answer such as GPS for gathering absolute location of features, using drones to acquire aerial imagery, or the use of satellites for observing the Earth at a global scale.

57. How do Earth's four major subsystems interact with each other? Provide at least 3 examples of different subsystems interacting with one another. Answer the question in 5-10 sentences.

ANSWER: May vary. Possible answers include the following. Water from the hydrosphere flows through organisms, including people, and provides a habitat for aquatic plants and animals within the biosphere. The hydrosphere interacts with the lithosphere in many ways, such as by streams, waves, and currents shaping various landforms. Water also has important connections with the atmosphere through evaporation, condensation, and the effects of ocean temperatures on climate.

58. Give an example of a spatial interaction that occurs (or has previously occurred) in your region. Answer the question in 5-10 sentences and provide enough detail as to how and why these interactions occur.

ANSWER: May vary. Students might use an example based on physical or human factors. An example may include how water levels for all the rivers and lakes in their region have lowered because of a lack of snow in the mountains that feed those rivers. Or they could point out that the region that they live in is arid and dry due to a mountain range hundreds of miles away blocking precipitation fronts from coming to their area.

59. If you were to classify where you live as a "region," name at least five characteristics you would use to describe this region. You can include both physical and human factors. Answer in 5-10 sentences.

ANSWER: May vary. Some examples include highlighting the landscape of the area, cultural aspects, or other demographics. The student can identify physical and human factors for this question. *ex: We live in the Rocky Mountains, so this region is mountainous and dry. The vegetation is predominantly pine trees and coniferous forest. The culture in the area shares some common characteristics. Everybody likes to ski in the winter, and everybody cheers for the Broncos. This area is home to many elk and mule deer that have adapted to the terrain. Winters are typically wet and cold with dry, hot summers.*

60. Let us say that you live in an area that was once abundant with wildlife and vegetation but is now dry and barren, with little wildlife remaining. As a geographer, what are four factors that you would investigate to try to discover the cause of this problem? How would you use a holistic approach? Answer in 5-10 sentences.

ANSWER: May vary. Students should identify four key factors that would all contribute to this issue and briefly explain how they are interrelated. *The climate has changed in the area, making it less fertile and supportive for plants and animals. The humans in the area overconsumed the plants; thus much of the wildlife left, because there were much fewer natural resources available. The rivers in the area had all been dammed up for irrigation, which contributed to increased evaporation. Overgrazing and unsustainable farming also contributed to the degradation of the environment.*

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